

Write in Dark Ink on Front Side Only, Please

INVENTION DISCLOSURE

PAGE ONE OF ____

PDNO 10606354

DATE RCVD Aug 8, 2000

ATTORNEY LRS

Instructions: The information contained in this document is **COMPANY CONFIDENTIAL** and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.

RECEIVED

Descriptive Title of Invention:

VOIP PACKET CONSOLIDATION

AUG 04 2000

Name of Project:

N/A

H.P. BOISE LEGAL

Product Name or Number:

N/A

Description of Invention: Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).

- A. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)
- B. Advantages of the invention over what has been done before.
- C. Problems solved by the invention.
- D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.)

Signature of Inventor(s): Pursuant to my (our) employment agreement, I (we) submit this disclosure on this date: [8-4-00].

340243	JEFFREY S. WEAVER	<i>Jeff S. W</i>	396-5940	125	DLP
Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name

Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name
--------------	------	-----------	--------	----------	-------------------

Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name
--------------	------	-----------	--------	----------	-------------------

Employee No.	Name	Signature	Telnet	Mailstop	Entity & Lab Name
--------------	------	-----------	--------	----------	-------------------

(if more than four inventors, include additional information on another copy of this form and attach to this document)

Write in Dark Ink on Front Side Only, Please

INVENTION DISCLOSURE		COMPANY CONFIDENTIAL		PAGE ____ OF ____	
Signature of Witness(es): <i>(Please try to obtain the signature of the person(s) to whom invention was first disclosed.)</i>					
The invention was first explained to, and understood by, me (us) on this date: 8-4-00					
Full Name	Signature	Date of Signature			
David J. Luman	<i>David J. Luman</i>	8-4-2000			
Full Name	Signature	Date of Signature			
Inventor & Home Address Information: <i>(If more than four inventors, include addl. information on a copy of this form & attach to this document.)</i>					
Inventor's Full Name					
JEFFREY S. WEAVER					
Street					
City					
ON FILE					
State					
Zip					
Do you have a Residential P.O. Address? P.O. BOX					
City					
State					
Zip					
Greeted as <i>(nickname, middle name, etc.)</i>					
Citizenship					
Inventor's Full Name					
Street					
City					
State					
Zip					
Do you have a Residential P.O. Address? P.O. BOX					
City					
State					
Zip					
Greeted as <i>(nickname, middle name, etc.)</i>					
Citizenship					
Inventor's Full Name					
Street					
City					
State					
Zip					
Do you have a Residential P.O. Address? P.O. BOX					
City					
State					
Zip					
Greeted as <i>(nickname, middle name, etc.)</i>					
Citizenship					
Inventor's Full Name					
Street					
City					
State					
Zip					
Do you have a Residential P.O. Address? P.O. BOX					
City					
State					
Zip					
Greeted as <i>(nickname, middle name, etc.)</i>					
Citizenship					

Write in Dark Ink on Front Side Only, Please

Description of Invention: <i>Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).</i>
<p>A. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)</p> <p>NETWORK ROUTERS MAY TRANSMIT DATA FROM COMMON SOURCES AND TO COMMON DESTINATIONS. IN THESE CASES, SHORT VOIP PACKETS MAY BE TAGGED AT GENERATION, THEN CONSOLIDATED AND TRANSMITTED AS ONE LARGER PACKET. THIS IMPROVES NETWORK UTILIZATION BY REDUCING THE NUMBER OF HEADERS NEEDED. IT ALSO AVOIDS THE DATA TO BE SENT SOONER, THUS REDUCING OBJECTIONABLE DELAY IN THE LISTENER'S AUDIO.</p>
<p>B. Advantages of the invention over what has been done before.</p> <p>CONSOLIDATION (DECOMPOSITION) OF PACKETS CAN OCCUR TRANSPARENTLY TO BOTH SENDER AND RECEIVER.</p> <p>METHOD EFFECTIVELY REDUCES NETWORK TRAFFIC INSTEAD OF INCREASING IT, AS PRIORITIZATION CAUSES.</p>
<p>C. Problems solved by the invention.</p> <p>VOICE OVER IP (VOIP) PACKETIZES COMPRESSED DIGITAL SOUND INFORMATION, THEN SENDS IT OVER A NETWORK SYSTEM. THE PACKETS ARE REASSEMBLED AND DECOMPRESSED AT THE RECEIVING END, THEN PLAYED. DUE TO THE EFFICIENT COMPRESSION ALGORITHMS USED, VERY SHORT PACKETS MAY BE GENERATED FREQUENTLY. FOR NETWORK EFFICIENCY REASONS, THESE PACKETS ARE TYPICALLY BUFFERED UNTIL A LARGE ENOUGH PACKET IS ACCUMULATED TO TRANSMIT EFFICIENTLY. THIS BUFFERING CAUSES DELAY WHICH IS FREQUENTLY PERCEPTIBLE TO THE LISTENER AND IS OBJECTIONABLE. THE INVENTION DETAILS A METHOD FOR REDUCING THE DELAY AND FURTHER IMPROVING NETWORK UTILIZATION. ESPECIALLY FOR BROADCAST SCENARIOS. ALSO MAKES ECHO CANCELLATION EASIER.</p>
<p>D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).</p> <p>PACKET PRIORITIZATION IS USED TO GIVE VOIP PACKETS ADDITIONAL BANDWIDTH ON NETWORKS. THIS SLOWS OTHER TRAFFIC AND GENERATES MANY EXTRA HEADERS, REDUCING EFFICIENT UTILIZATION.</p>

Form 3.1a idf-IPS-LaserJet.doc, rev. 06/09/00